

3.4.2 ACTIVITY HAZARD ANALYSIS FOR SOIL EXCAVATION		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Excavation of Soil	Struck By/ Against Heavy Equipment	<ul style="list-style-type: none"> • Use reflective warning vests worn when exposed to vehicular traffic • Avoid equipment swing areas • Make eye contact with operators before approaching equipment • Understand and review hand signals
	Underground Utilities	<ul style="list-style-type: none"> • Identify all underground utilities around the excavation site before work commences • Cease work immediately if unknown utility markers are uncovered
	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use
	High Noise Levels	<ul style="list-style-type: none"> • Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period)
Excavation of Soil (Continued)	Excavation Wall Collapse	<ul style="list-style-type: none"> • Construct diversion ditches or dikes to prevent surface water from entering excavation • Provide good drainage of area adjacent to excavation • Collect ground water/rain water from excavation and dispose of properly • Store excavated material at least 2 feet from the edge of the excavation; prevent excessive loading of the excavation face • Provide sufficient stairs, ladders, or ramps when workers enter excavations over 4 feet in depth • Place ladders no more than 25 feet apart laterally • Treat excavations over 4 feet deep as confined spaces • Complete confined space permit entry procedure • Monitor atmosphere for flammable/toxic vapors, and oxygen deficiency • Slope, bench, shore, or sheet excavations over 5 feet deep if worker entry is required • Assign a competent person to decide soil classification, proper sloping, the correct shoring, or sheeting • Provide at least two means of exit for personnel working in excavations



3.4.1 ACTIVITY HAZARD ANALYSIS FOR SITE PREPARATION		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Grading	Struck By/ Against Heavy Equipment	<ul style="list-style-type: none"> • Avoid equipment swing areas • Make eye contact with operators before approaching equipment • Understand and review hand signals
	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use
	Insect/ Snake Bites	<ul style="list-style-type: none"> • Review injury potential and types of snakes with workers • Avoid insect nests areas, likely habitats of snakes outside work areas • Emphasize The Buddy System where such injury potential exists • Use insect repellant, wear PPE to protect against sting/bite injuries.
	Contact Dermatitis	<ul style="list-style-type: none"> • Wear PPE to avoid skin contact with contaminated soil, plants, or other skin irritants (See Section 5) • Identify and review poisonous plants with workers
	High Noise Levels	<ul style="list-style-type: none"> • Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period)
	High Ambient Temperature	<ul style="list-style-type: none"> • Monitor for Heat stress in accordance with OHM Health and Safety Procedures Manual
Equipment/ Facility Set-up	Slips, Trips, Falls	<ul style="list-style-type: none"> • Clear walkways work areas of equipment, tools, vegetation, excavated material and debris • Mark, identify, or barricade other obstructions
	Handling Heavy Objects	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads

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3.4.1 ACTIVITY HAZARD ANALYSIS FOR SITE PREPARATION		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Equipment/ Facility Set-up (Continued)	Sharp Objects	<ul style="list-style-type: none">• Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects• Maintain all hand and power tools in a safe condition• Keep guards in place during use
	High Noise Levels	<ul style="list-style-type: none">• Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period)
	High Ambient Temperature	<ul style="list-style-type: none">• Monitor for Heat stress in accordance with OHM Health and Safety Procedures Manual

3.4.2 ACTIVITY HAZARD ANALYSIS FOR DEBRIS STAGING AND REMOVAL		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Debris Removal, Staging	Struck by, Against Debris, Protruding Objects, Splashes	<ul style="list-style-type: none"> • Restrict entry to the work area to authorized personnel only • Wear hard hats, face shields, and steel-toe safety boots • Place adequate, safe lighting in Process building work areas • Position lighting for specific tasks • Remove dangling, weak overhead obstructions
	Slips, Trips, Falls	<ul style="list-style-type: none"> • Clear walkways, work areas of equipment, tools, and debris materials • Mark, identify, or barricade other obstructions • Apply oil-dry/sand to slippery work surfaces
	Handling Heavy Objects	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum for manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use
	High Noise Levels	<ul style="list-style-type: none"> • Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period)
	Burns	<ul style="list-style-type: none"> • Use proper work gloves, face shield/safety goggles, and leather apron to protect workers from skin burns when using power weed cutting equipment
	Inhalation and Contact with Hazardous Substances	<ul style="list-style-type: none"> • Provide workers proper skin, eye and respiratory protection based on the exposure hazards present (Section 5.0) • Review contaminant chemical MSDSs with workers before operations begin
	Caught In/ Between Moving Parts, Objects	<ul style="list-style-type: none"> • Provide and use proper work gloves when the possibility of crush, pinch, or other injury may be caused by moving/stationary edges or objects • Maintain all equipment in a safe condition • Keep all guards in place during use • De-energize and lock-out machinery before maintenance or service

3.4.3 ACTIVITY HAZARD ANALYSIS FOR DRUM AND CYLINDER HANDLING		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Staging/ Overpacking Drums and Cylinders	Handling Heavy Objects	<ul style="list-style-type: none"> Observe proper lifting techniques Obey sensible lifting limits (60 lb. maximum for manual lifting) Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Slips, Trips, Falls	<ul style="list-style-type: none"> Clear walkways, work areas of equipment, tools, and debris Mark, identify, or barricade other obstructions
	Caught In/ Between Moving Parts, Objects	<ul style="list-style-type: none"> Provide and use proper work gloves when the possibility of crush, pinch, or other injury may be caused by moving/stationary edges or objects Maintain all equipment in a safe condition Keep all guards in place during use De-energize and lock-out machinery before maintenance or service
	Fire/ Explosion	<ul style="list-style-type: none"> Test atmosphere with combustible gas meter Eliminate sources of ignition from the work area Smoking is prohibited Provide ABC (or equivalent) fire extinguishers in all work and flammable storage areas Store flammable liquids in well ventilated areas Post "NO SMOKING" signs Store combustible materials away from flammables Store, all compressed gas cylinders upright, caps in place when not in use Separate Flammables and Oxidizers by 20 feet
	Sharp Objects	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects Maintain all hand and power tools in a safe condition Keep guards in place during use
	Struck by, Against Heavy Equipment, Protruding Objects	<ul style="list-style-type: none"> Avoid equipment swing areas Make eye contact with operators before approaching equipment Understand and review posted hand signals

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3.4.3 ACTIVITY HAZARD ANALYSIS FOR DRUM AND CYLINDER HANDLING		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Staging/ Overpacking Drums and Cylinders (cont'd)	Inhalation and Contact with Hazardous Substances	<ul style="list-style-type: none">• Provide workers proper skin, eye and respiratory protection based on the exposure hazards present (Section 5.0• Review contaminant chemical MSDSs with workers before operations begin
	High Ambient Temperature	<ul style="list-style-type: none">• Monitor for heat in accordance with OHM Health and Safety Procedures Manual

3.4.4 ACTIVITY HAZARD ANALYSIS FOR CONTAINER SAMPLING, INVENTORY		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Container Sampling, inventory	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use
	Handling Heavy Objects	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum for manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move drums/containers
	Slips, Trips, Falls	<ul style="list-style-type: none"> • Clear walkways, work areas of equipment, tools, and debris • Mark, identify, or barricade other obstructions
	Inhalation and Contact with Hazardous Substances (deteriorated drums; leaking chemicals)	<ul style="list-style-type: none"> • Provide workers proper skin, eye and respiratory protection based on the exposure hazards present (Section 5.0) • Review contaminant chemical MSDSs with workers before operations begin • Use buddy system during inventory • Inspect condition of drums before marking or sampling • Inspect for signs of leaking chemicals • Provide spill response materials and equipment (Section 8.0) • Use remote opening procedures/equipment for pressurized drums • Do not stand on drums
	High Ambient Temperature	<ul style="list-style-type: none"> • Monitor for heat stress in accordance with OHM Health and Safety Procedures Manual

3.4.5 ACTIVITY HAZARD ANALYSIS FOR LAB PACKING, CRUSHING UNKNOWNNS, AND DRUM SHREADDING		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Labpacking Drums	Handling Heavy Objects	<ul style="list-style-type: none"> Observe proper lifting techniques Obey sensible lifting limits (60 lb. maximum for manual lifting) Use mechanical lifting equipment (hand carts, trucks) to move drums/containers
	Slips, Trips, Falls	<ul style="list-style-type: none"> Clear, walkways of equipment, tools and other debris Mark, identify, or barricade other obstructions
	Fire/ Explosion	<ul style="list-style-type: none"> Test atmosphere with combustible gas meter Eliminate sources of ignition from the work area Smoking is prohibited Provide ABC (or equivalent) fire extinguishers in all work and flammable storage areas Store flammable liquids in well ventilated areas Post "NO SMOKING" signs Store combustible materials away from flammables Store, all compressed gas cylinders upright, caps in place when not in use Separate Flammables and Oxidizers by 20 feet
	Sharp Objects	<ul style="list-style-type: none"> Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects Maintain all hand and power tools in a safe condition Keep guards in place during use
	Struck by/Against Equipment, Protruding Objects	<ul style="list-style-type: none"> Avoid equipment swing areas Make eye contact with operators before approaching equipment Wear hard hats and steel-toe safety boots Understand and review posted hand signals
	Inhalation and Contact with Hazardous Substances	<ul style="list-style-type: none"> Provide workers proper skin, eye and respiratory protection based on the exposure hazards present (Section 5.0) Review contaminant chemical MSDSs with workers before operations begin
	High Ambient Temperature	<ul style="list-style-type: none"> Monitor for Heat/Cold stress in accordance with OHM Health and Safety Procedures Manual

3.4.5 ACTIVITY HAZARD ANALYSIS FOR LAB PACKING, CRUSHING UNKNOWNNS, AND DRUM SHREADDING		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Shredding of Empty Drums and Containers	Struck by/Against Heavy Equipment, Flying Debris	<ul style="list-style-type: none"> • Avoid equipment swing areas • Make eye contact with operators before approaching equipment • Barricade or enclose the work area • Restrict entry to the work area to authorized personnel during shredding activities • Wear hard hats, safety glasses with side shields, and steel-toe safety boots • Understand and review posted hand signals
	Inhalation and Contact with Hazardous Substances	<ul style="list-style-type: none"> • Provide workers proper skin, eye and respiratory protection based on the exposure hazards present (Section 5.0) • Review contaminant chemical MSDSs with workers before operations begin
	Slips, Trips, Falls	<ul style="list-style-type: none"> • Clear, walkways of equipment, tools and other debris • Mark, identify, or barricade other obstructions
	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use
	Caught In/ Between Moving Parts, Objects	<ul style="list-style-type: none"> • Provide and use proper work gloves when the possibility of crush, pinch, or other injury may be caused by moving/stationary edges or objects • Maintain all equipment in a safe condition • Keep all guards in place during use • De-energize and lock-out machinery before maintenance or service

3.4.5 ACTIVITY HAZARD ANALYSIS FOR LAB PACKING, CRUSHING UNKNOWNNS, AND DRUM SHREADDING		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Shredding of Empty Drums and Containers (cont'd)	Fire/ Explosion	<ul style="list-style-type: none"> • Eliminate sources of ignition from the work area • Smoking is prohibited • Provide ABC (or equivalent) fire extinguishers in all work and flammable storage areas • Store flammable liquids in well ventilated areas • Post "NO SMOKING" signs • Store combustible materials away from flammables • Store, any compressed gas cylinders upright, caps in place when not in use • Separate Flammables and Oxidizers by 20 feet

3.4.6 ACTIVITY HAZARD ANALYSIS FOR HAZCAT ACTIVITIES		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
HAZCAT Testing	Inhalation and Contact with Hazardous Substances	<ul style="list-style-type: none"> • Provide workers proper skin, eye and respiratory protection based on the exposure hazards present (Section 5.0) • Review contaminant chemical MSDSs with workers before operations begin
	Fire/ Explosion	<ul style="list-style-type: none"> • Follow all procedures as provided in the current edition of OHM Compatibility Testing Manual • Use required equipment for testing materials as required by the current edition of OHM Compatibility Testing Manual • Use only 5g sample for compatibility testing • Oxidizer and metals compounds are very reactive materials; it is recommended that these materials not be compatibility tested when field analytical data is not available • Keep samples and drums out of direct sunlight and heat • Conduct hazcat testing within lab fume hood • Test atmosphere with combustible gas meter • Eliminate sources of ignition from the work area • Prohibit smoking in HAZCAT work area • Provide ABC (or equivalent) fire extinguishers in all work areas • Store flammable liquids in well ventilated areas • Post "NO SMOKING" signs • Store combustible materials away from flammables • Separate Hazard class materials by compatible groups
	Slips, Trips, Falls	<ul style="list-style-type: none"> • Clear walkways of equipment, tools, and stored materials • Maintain housekeeping in HAZCAT work area
	Sharp Objects	<ul style="list-style-type: none"> • Wear cut resistant work gloves when the possibility of lacerations or other injury may be caused by sharp edges or objects • Maintain all hand and power tools in a safe condition • Keep guards in place during use
	High Ambient Temperature	<ul style="list-style-type: none"> • Monitor for Heat stress in accordance with OHM Health and Safety Procedures Manual

3.4.7 ACTIVITY HAZARD ANALYSIS FACILITY DECONTAMINATION		
TASK BREAKDOWN	POTENTIAL HAZARDS	HAZARD CONTROL MEASURES
Walls, Floors, Sumps, Pits	Struck by, Against Heavy Equipment, Protruding Objects	<ul style="list-style-type: none"> • Avoid equipment swing areas • Make eye contact with operators before approaching equipment • Wear hard hats, safety glasses with side shields, and steel-toe safety boots • Understand and review hand signals
	Slips, Trips, Falls	<ul style="list-style-type: none"> • Clear, walkways of equipment, excavated material, tools and debris • Mark, identify, or barricade obstructions and/or floor pits
	Handling Heavy Objects	<ul style="list-style-type: none"> • Observe proper lifting techniques • Obey sensible lifting limits (60 lb. maximum per person manual lifting) • Use mechanical lifting equipment (hand carts, trucks) to move large, awkward loads
	Electrical Shock	<ul style="list-style-type: none"> • De-energize or shut off utility lines at their source before work begins • Use double insulated or properly grounded electric power-operated tools • Maintain tools in a safe condition • Provide an equipment-grounding conductor program or employ ground-fault circuit interrupters • Use qualified electricians to hook up electrical circuits • Inspect all extension cords daily for structural integrity, ground continuity, and damaged insulation • Cover or elevate electric wire or flexible cord passing through work areas to protect from damage • Keep all plugs and receptacles out of water • Use approved water-proof, weather-proof type if exposure to moisture is likely • Inspect all electrical power circuits prior to commencing work • Follow Lockout-Tagout procedures in accordance with OHM Health and Safety Procedures Manual
	High Noise Levels	<ul style="list-style-type: none"> • Use hearing protection when exposed to excessive noise levels (greater than 85 dBA over an 8-hour work period)

Walls, Floors, Sumps, Pits (Continued)	Burns	<ul style="list-style-type: none"> • Use proper PPE and check all equipment before beginning facility decontamination or equipment decontamination
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